

Regulation of Learning as Distributed Teaching Presence in the Community of Inquiry Framework

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The paper proposes Regulation of Learning as a new category of Teaching Presence in the Community of Inquiry framework. This framework states that on online educational collaborative constructivist experience is a product of three elements of the learning community: Social Presence, Cognitive Presence and Teaching Presence. The paper addresses the debate about the completion of the model, proposes the addition of a new category of Teaching Presence and the rationale that supports it and presents the resulting enhanced analytical model of Teaching Presence developed to study, through content analysis, the online interactions in a course. Preliminary results of a study where this enhanced Teaching Presence construct was used enabled us to draw some conclusions about the educational activities where the new category will have more probability to appear and its distribution among the participants.

Keywords: teaching presence, community of inquiry, regulation of learning

Introduction

The Community of Inquiry (CoI) framework states that on online educational collaborative constructivist experience is a product of three elements of the learning community: Social Presence, Cognitive Presence and Teaching Presence (Garrison, Anderson, & Archer, 2000; Garrison & Anderson, 2003). A proposal of another Presence, Learning Presence (Shea, 2011; Shea et al., 2012), triggered a debate about the completion of the model. R. Garrison, one of the main founders of the model, defended that the three original Presences were sufficient and there was no necessity of a fourth Presence (Akyol & Garrison, 2011; Garrison & Akyol, 2013). The question remaining was where to locate in the model behaviors like the ones representing self and co-regulation of learning, if not in a supposed Learning Presence. In the context of a study to explore the development of the CoI along a course and how Distributed Teaching Presence emerged, we have found that these regulating behaviors might be, not a fourth element of the model but another component of Teaching Presence. Against the background of the debate about an eventual fourth Presence, we developed an enhanced Teaching Presence model that would capture teaching behaviors not exclusive to the online teacher. The purpose of paper is to propose and present this enhanced Teaching Presence model and the *rationale* that supports it and preliminary results of a study where this enhanced Teaching Presence construct was used.

In terms of relevance of the study, teaching online issues are always a current and important topic. Apart from that, the research about Distributed Teaching Presence has been an object of research in the CoI framework (Shea, Hayes & Vickers, 2010) and is also an autonomous line of research outside the CoI framework under the concept of "distributed educational influence" (Coll, Bustos, Engel, de Gispert & Rochera, 2013).

We think that the study of the presence of teaching behaviors in online courses is a promising line of research, especially in Massive Open Online Courses (MOOCs) where the scalability issue demands a great degree of teaching presence distribution.

Theoretical framework

The Community of Inquiry (CoI) model and framework, proposed in a keystone paper (Garrison et al., 2000) and subsequently in a book by R. Garrison and T. Anderson (Garrison & Anderson, 2003), is one of the most researched models of online education since the last decade. The four major papers and book have more than 1000 citations in Google Scholar (Anderson & Dron, 2014, p. 109). It states that on online educational collaborative constructivist experience is a product of three elements of the learning community: Social Presence, Cognitive Presence and Teaching Presence. In an introduction to a special issue about the model, Swan & Ice define as such the three Presences:

Social presence is defined as the degree to which participants in computer-mediated communication feel affectively connected one to another; cognitive presence is conceptualized as the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse; and teaching presence is defined as the design, facilitation and direction of cognitive and social processes to support learning. (Swan & Ice, 2010, p. 1)

Addressing whole course interactions, P. Shea and his team found discourse that was not codable by the CoI framework including evidence of online learner self and co-regulation. "In activities typical of collaborative educational models learners need to engage in forms of planning, monitoring, and strategy characteristic of learner qua learners in order to be successful. These behaviors are distinct from those taken on by instructors." (Shea, Hayes, & Vickers, 2010, p. 141) These behaviors were considered specific to the e-student role and a fourth structural element of the CoI framework named Learning Presence was proposed (Shea & Bidjerano, 2010, p. 1727).

R. Garrison and Z. Akyol accept that there is a place for a metacognition construct (that includes Regulation of Learning) in the CoI framework but don't accept it as a Presence. "The creation of a fourth presence would undermine the integrity of the CoI framework and would not enhance or refine its theoretical foundation." (Akyol & Garrison, 2011, p. 189) If we look for a place for Regulation of Learning in the CoI framework it would be at the intersection of the Cognitive (inquiry process) and Teaching Presences (metacognitive awareness) elements (Garrison & Akyol, 2013, p. 85), as depicted in Figure 1.

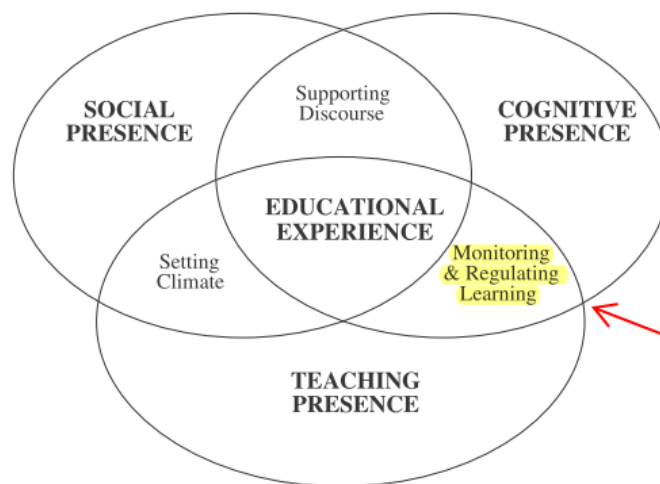


Figure 1. Representation of the CoI in Akyol & Garrison (2011, p. 185).
The highlight and arrow are ours.

One distinguishing trait of the model is the way it dissociates the actor and the function: "In the CoI theoretical framework there are no independent teacher and learner presences; all participants assume teaching and learning roles and responsibilities to varying degrees" (Akyol & Garrison, 2011, p. 189). It assumes *Teaching Presence* and not *Teacher Presence*. So the teaching function may be exerted by other participants. "Notwithstanding the essential role of a teacher, it needs to be emphasized that in a community of inquiry (...) all participants have the opportunity

to contribute to teaching presence" (Garrison & Anderson, 2003, p. 71). This means that Teaching Presence may be a distributed function not exclusive of the teacher, even in a formal online educational setting. This distribution may be intentionally framed in the teacher's instructional design (for example by peer moderation activities) but may also emerge naturally from the cooperative and collaborative interactions between the students as they pursue their social learning in the virtual environment(s). The later corresponds to what Dias (2008) characterizes as the second model of e-moderation as

um processo partilhado, (...) devolvendo, desta forma, a liderança à comunidade, nas actividades de intervenção, acompanhamento e construção do conhecimento. Emerge desta prática o princípio da liderança partilhada, o qual corresponde a um exercício de autonomia da comunidade orientado para a negociação colaborativa do sentido na construção das aprendizagens (Dias, 2008, pp. 6–7)¹

In their original form, the CoI framework proposed *Design and Organization*, *Facilitation of Discourse* and *Direct Instruction* as the categories of Teaching Presence, characterized as below:

The activities in the design and organization category of teaching presence include building curriculum materials, re-purposing materials and designing and administering group and individual learning activities. Facilitating discourse is critical to maintaining interest, motivation and engagement. It enables and encourages the construction of personal meaning as well as shaping and confirming mutual understanding. Direct instruction goes beyond that of a facilitating role by providing scholarly leadership and sharing timely subject matter knowledge with participants. (Akyol & Garrison, 2011, p. 186)

Shea et al (2010) proposed that *Assessment* should be added and considered a category of Teaching Presence by its own right (being in part detached from *Direct Instruction*).

Proposal of an enhanced Teaching Presence construct

Trying to account for a place for Regulation of Learning in the CoI without adding a fourth Presence and having in mind the Distributed Teaching Presence issue we propose that *Regulation of Learning* should be considered another category of Teaching Presence.

This proposal faces some immediate objections. The area of Learning Regulation has long been associated with Self-Regulated Learning (SRL).

We can define Self-Regulated Learning as a learning process where students master and deliberately control their own learning, by setting their goals, by choosing their learning strategies, by reflecting on their own learning and by evaluating their progress and consequently adapting their strategies, with a cyclic process. (Dettori & Persico, 2008, p. 4)

According to the previous, SRL is part of learning and is an individual behavior of self-regulation of one's learning process. How can it be considered "teaching" if it is an individual process and is a component of learning?

Although most of the research about Learning Regulation is focused on the self-regulation, regulation of learning may also be of a social nature, in social learning (collaborative or cooperative) contexts. Järvelä & Hadwin (2013) distinguish three types of regulated learning in collaborative learning: self-, shared and co-regulated learning. In the latter two, the regulation has its origins in other participants. In shared regulation the collective exerts the regulation: "*Shared regulation* occurs when groups regulate as a collective such as when they construct shared task perceptions or shared goals." (Järvelä & Hadwin, 2013, p. 28); in co-regulation, other individual participants exert the

¹ "(...) a shared process (...) giving back in this way the leadership to the community, in the activities of intervention, supervision and construction of knowledge. From this practice emerges the principle of shared leadership which corresponds to an exercise of autonomy by the community, oriented to the collaborative negotiation of meaning in the construction of learning".

regulation: "*Co-regulation* occurs when individuals' regulatory activities are guided, supported, shaped, or constrained by and with others." (Järvelä & Hadwin, 2013, p. 28) It is this last kind of social regulation that can be considered as a component of Teaching Presence. That does not mean that all regulation of learning may be considered Teaching Presence. That would not apply to self-regulation, for example, only to social regulation of learning.

The previous definitions still presuppose that regulation is part of learning, it is regulated learning. However, having in mind the social regulation dimension, we propose to consider regulation not as a qualifying attribute of learning (regulated learning) but as a teaching behavior, the Regulation of Learning. Regulation is about "(...) the strategic control of one's knowledge and learning." (Chan, 2012, p. 68) As co-regulation, in a social context, this strategic control may be considered a teaching behavior. It would include leadership behaviors related to the regulation of the learning process, the management of goals, strategies of group work, assessing tasks and work phase's completion etc.

We propose that when the participants in the learning community regulate each other's learning processes, mainly in group-work activities, they exert (distributed) Teaching Presence in a way not previously addressed by the CoI framework. If the learning and teaching roles are shared by the participants in the CoI, this dimension of Teaching Presence has a high probability of being distributed and have its source in other students, for instance in group work processes. But it has not to be exclusive to learners; it may also be exerted by the teacher. That would make it an excellent enhancement to the original Teaching Presence construct having in mind the study of its distribution among all the participants of the CoI.

We have built upon the analytical model proposed by Shea & Bidjerano, 2010; Shea, Hayes & Vickers, 2010; Shea, Hayes, Vickers et al., 2010 and added the following category and indicators of Regulation of Learning. The Regulation of Learning indicators were developed by a review of the literature about the Learning Presence proposal in the CoI (Shea & Bidjerano, 2010; Shea et al., 2012) and the research on Distributed Teaching Presence and Distributed Educational Influence (Bustos, 2010; Coll, Engel, & Bustos, 2009; Engel, Coll, & Bustos, 2013).

Table 1.
The Regulation of Learning category of Teaching Presence.

Category	Indicators	Code	Definition
Regulation of Learning (Processes)	Confirming understanding of tasks	TPREG-1TASKCOMP	Seeks to confirm understanding of tasks, events or learning processes
	Assessing learning strategies and/or proposing correction of those strategies	TPREG-2STRATEVAL	Assesses learning strategies and/or proposes correction of those strategies
	Assessing work processes and/or proposing corrections of those processes	TPREG-3PROCEVAL	Assesses work processes and/or proposes corrections of those processes
	Advocating effort or focus on the task	TPREG-4INCENT	Encourages others to contribute or focus on tasks, resources and activities.
	Recalling tasks to be accomplished	TPREG-5MEME	Recalls tasks or sub-tasks to be accomplished
	Giving help to the learning process	TPREG-6HELP	Gives help to tasks, processes or products of learning
	Assessing the degree of completion of task	TPREG-7TAKSCUMP	Assesses the degree of completion of task or subtask
	Managing work phases or tasks	TPREG-8GESTTASK	Proposes advancing to new work phase or task

Preliminary Results of an Empirical Study of Distributed Teaching Presence in an Online Course

Although this is mainly a theoretical paper we will present some preliminary results of a study where we applied the enhanced Teaching Presence construct to make content analysis of the interactions in an online course.

We have studied an online Master's Degree course (Curricular Unit) from a Distance Education University in Portugal. The course had five educational activities developed in the institutional Learning Management System (Moodle) and was designed in a social constructivist model aiming to develop collaborative knowledge building in a learning community. The interaction spaces of activities 1, 3 and 4 included small group work forums and a class forum. The activity 2 had only a class discussion forum. The interaction space of activity 5 was a class forum that run throughout the course, dealing with the design, development of a class blog where the class learning products would be published. This later forum acted as a kind of group work forum of the whole online class. There were 16 students enrolled in the course.

We coded the messages using the the CoI enhanced Teaching Presence model with the software MaxQDA. These were the results of the content analysis.

Table 2.

Global Teaching Presence results.

Teaching Presence	Freq.	Perc.
<i>Design and Organization</i>	156	44.6
<i>Facilitation of Discourse</i>	74	21.1
<i>Direct Instruction</i>	28	8.0
<i>Regulation of Learning</i>	37	10.6
<i>Assessment</i>	55	15.7
Total	350	100.0

The global Teaching Presence results shows that the *Design and Organization* category had the higher result (44.6%), followed by *Facilitation of Discourse* (21.1%) and *Assessment* (15.7%). The proposed new category *Regulation of Learning* was found in 10.6 % of the messages coded as Teaching Presence. This shows that, although not the most frequent category, there was evidence of regulation of learning behaviors throughout the course.

Table 3.
Distributed Teaching Presence results.

Teaching Presence	Prof (freq.)	Prof (%)	Stds (freq.)	Stds (%)
Design and Organization	75	48.1	81	51.9
Facilitation of Discourse	24	32.4	50	67.6
Direct Instruction	5	17.9	23	82.1
Regulation of Learning	2	5.4	35	94.6
Assessment	33	60.0	22	40.0
Total	139	39.7	211	60.3

The analysis of the distribution of the Teaching Presence categories by the teacher and the students' messages shows that *Regulation of Learning* had its source mostly in the students' messages (94.6%). We have found evidence, for instance, of managing work phases or tasks ("I think we should start updating the blog"), assessing group work and proposing corrections ("We should make here a small adjustment to make a better use of time and improve the group procedures") or recalling tasks to be accomplished ("The image team still awaits an answer from the request to make the final adjustments").

However, regulation of learning was not exclusive of students. There were just 2 messages (5,4%) from the teacher with evidence of regulation of learning but this very result has a particular significance because it shows that they could not have been considered learning behaviors. Both occurred in the activity 5. In one of them the teacher manages task phases of the blog development suggesting new steps to be taken ("...the designation of theme 1 has to be selected among the different proposals suggested by the different groups").

Table 4.
Distribution of Regulation of Learning (RL) by the forum types.

Forum type	RL Freq.	RL Perc.
Work group forums	25	67.6
Class debate forums	1	2.7
Class project forum	11	29.7
Total	37	100

The great majority of the regulating behaviors occurred in the work group forums (67.6%), followed by the class project forum (29.7%) and the class debate forums with only 2.7% (one message). If we bear in mind that the class project forum is a kind of global work group forum we may conclude that there is a definite pattern that the regulative behavior has more probability of occurring in this kind of forums, where cooperative learning interactions – characterized by positive interdependence because of shared goals (Johnson & Johnson, 2009) - develop, than in debate forums where collaborative learning is the aim.

Conclusions

Our proposal of a *Regulation of Learning* as an additional category of Teaching Presence in the CoI framework enables a more thorough and comprehensive study of Distributed Teaching Presence without undermining the integrity of the model by creating a fourth Presence. Although facing some immediate objections due to regulation being mainly considered as individual and a component of learning, its understanding as co-regulation, stemming

from other participants in an online learning community, allows it to be understood as a teaching behavior in a setting where these behaviors may originate from any participant in the community of inquiry.

The preliminary results of an empirical study that applied the enhanced Teaching Presence construct to make content analysis of the interactions in an online course showed, indeed, evidence of this (proposed) category of Teaching Presence. The great majority of Regulation of Learning evidence were student interventions but there were also (a few) regulating behaviors from the teacher. The educational activities where they were more frequent were activities of cooperative learning, typical of workgroup assignments. We presume that that these results may aspire to a certain degree of generalization but are dependent on contextual factors. For instance, the style of online teaching definitely influences the degree of regulation the teacher or e-moderator thinks he is generally supposed to exert or feels is necessary in specific circumstances.

With this paper we hope to make a humble contribution to the debate about the study of Distributed Teaching Presence, specifically in the CoI framework, adding to major contributions from authors like de Laat, Lally, Lipponen & Simons (2007) and Engel et al., (2013) that used a multi method approach to study it. In the first study they state that "(...) the presented data of this study clearly shows that both the teacher and students are engaging with tutoring responsibilities. Students are not only regulating their own learning but are also concerned with the *group regulation* (our italics) of NL."(de Laat et al., 2007, p. 25) We tried to provide a framework through which these regulation behaviors could be recognized and studied by content analysis.

Nevertheless, we must stress that this proposal and construct are a work in progress. Further research is needed: 1) to define conceptually this Regulation of Learning as Teaching Presence differentiating it from Learning and Collaborative Learning processes and its relation to Metacognition; and 2) to refine further this category in the Teaching Presence construct, namely by comparing it more closely with established SRL models like the four phase model of Zimmerman (1990) or the three phase model of Garcia and Pintrich (2000), applied in online settings (Bergamin, Persico, Steffens, & Underwood, 2011). A further challenge is the adjustment with the other Teaching Presence categories.

We speculate, for instance, that other regulation of learning indicators may have a place in other Teaching Presence categories (in particular in the *Design and Organization* category) of the CoI framework.

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